

Claims

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1. Audio information storage and playback apparatus comprising:
  - a universal data interface to receive a data file as part of an incoming signal, in digitized and compressed format, and to provide automatic data format recognition for this data file;
  - a microprocessor, connected to the data interface, to use the data format recognition information to implement a correct communications protocol to receive and extract the data file from the incoming signal, where the data file is received by the microprocessor at a transfer rate that is at least two times the transfer rate for audibly perceptible playback of information contained in the data file;
  - diskette recording means, connected to the microprocessor, for receiving a removable diskette, for receiving the data file extracted by the microprocessor, and for recording this data file on the removable diskette;
  - playback means for receiving the removable diskette and for selecting and decompressing at least one selected data file recorded on this diskette; and
  - audio output and conditioning means, connected to the playback means, for selecting and retrieving a selected data file and for reproducing the selected data file in audibly perceptible form for playback at a real time delivery rate.

2. The apparatus of claim 1, further comprising:
  - a keypad, having at least two keys thereon that are tactiley distinguishable or visually distinguishable, connected to said interface and to the playback means, that allows a command to be entered that selects said selected data file and that causes said audio output and conditioning means to convert said selected data file to audible speech.

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3. The apparatus of claim 1, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.
4. The apparatus of claim 1, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.
5. The apparatus of claim 1, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said data file on said diskette.
6. The apparatus of claim 5, wherein said diskette recording means comprises a removable hard drive system that accepts and records said data file on said removable diskette.
7. The apparatus of claim 5, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected data file.
8. The apparatus of claim 1, wherein said incoming signal is received as digitized text, and at least one of said microprocessor and said playback means includes a text-to-speech converter for converting digital text to an audio data file.
9. The apparatus of claim 1, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user

information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.

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10. Audio information storage and playback apparatus comprising:  
a universal data interface to receive a text data file as part of an incoming signal, in digitized and compressed format, and to provide automatic data format recognition for this data file;

a microprocessor, connected to the data interface, to use the text data format recognition information to implement a correct communications protocol to receive and extract the text data file from the incoming signal, where the text data file is received by the microprocessor at a transfer rate that is at least two times the transfer rate for normal, audibly perceptible playback of information contained in the text data file;

diskette recording means, connected to the microprocessor, for receiving a removable diskette, for receiving the text data file extracted by the microprocessor, and for recording this text data file in its compressed format on the removable diskette;

text-to-speech conversion means for receiving the removable diskette upon which at least one text data file is recorded and for converting a text data file to an output signal that is in audio format;

playback means for receiving the text-to-speech conversion means output signal and for selecting and decompressing at least one selected data file recorded on this diskette; and

audio output and conditioning means, connected to the playback means, for selecting and retrieving a selected text data file in audio format and for

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reproducing the selected text data file in audibly perceptible form for playback at a real time delivery rate.

11. The apparatus of claim 10, further comprising:

a keypad, having at least two keys thereon that are tactilely distinguishable or visually distinguishable, connected to said interface and to the playback means, that allows a command to be entered that selects said selected text data file and that causes said audio output and conditioning means to convert said selected text data file to audible speech.

12. The apparatus of claim 10, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.

13. The apparatus of claim 10, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.

14. The apparatus of claim 10, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said text data file on said diskette.

15. The apparatus of claim 14, wherein said diskette recording means comprises a removable hard drive system that accepts and records said text data file on said removable diskette.

16. The apparatus of claim 14, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected text data file.

17. The apparatus of claim 10, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.

*Suba<sup>37</sup>* 18. Audio information storage and playback apparatus comprising: a universal data interface to receive an audio data file as part of an incoming signal, in digitized and compressed format, and to provide automatic data format recognition for the audio data file;

a microprocessor, connected to the data interface, to use the audio data format recognition information to implement a correct communications protocol to receive and extract the compressed audio data file from the incoming signal, where the audio data file is received by the microprocessor at a transfer rate that is at least two times the transfer rate for normal, audibly perceptible playback of information contained in the audio data file;

diskette recording means, connected to the microprocessor, for receiving a removable diskette, for receiving the audio data file extracted by the microprocessor, and for recording this audio data file in its compressed format on the removable diskette;

playback means for receiving the removable diskette and for selecting and decompressing at least one selected audio data file recorded on this diskette; and

audio output and conditioning means, connected to the playback means, for selecting and retrieving a selected audio data file in audio format and for reproducing the selected audio data file in audibly perceptible form for playback at a real time delivery rate.

19. The apparatus of claim 18, further comprising:

a keypad, having at least two keys thereon that are tactilely distinguishable or visually distinguishable, connected to said interface and to the playback means, that allows a command to be entered that selects said selected audio data file and that causes said audio output and conditioning means to convert said selected audio data file to audible speech.

20. The apparatus of claim 18, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.

21. The apparatus of claim 18, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.

22. The apparatus of claim 18, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said audio data file on said diskette.

23. The apparatus of claim 22, wherein said diskette recording means comprises a removable hard drive system that accepts and records said audio data file on said removable diskette.

24. The apparatus of claim 22, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected audio data file.

25. The apparatus of claim 18, wherein said audio data file in said digitized and compressed format is compressed using a compression algorithm drawn from the class of audio compression algorithms consisting of perceptual encoding, Dolby Labs AC-3 and CCITT recommendation G.722.

26. The apparatus of claim 18, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.

*suba4* 27. Audio information storage and playback apparatus comprising:  
a universal data interface to receive a text data file as part of an incoming signal, in digitized and compressed format, and to provide automatic data format recognition for this text data file;

a microprocessor, connected to the data interface, to use the text data format recognition information to implement a correct communications protocol to receive and extract the text data file from the incoming signal, where the text data file is received by the microprocessor at a transfer rate that is at least two times the transfer rate for normal, audibly perceptible playback of information contained in the text data file;

text-to-speech conversion means, connected to the microprocessor, for receiving a text data file and for converting the text data file to an output signal that is in digitized audio format;

audio compression means for receiving the text-to-speech conversion means output signal and for producing an audio data output signal in a compressed audio format;

diskette recording means, connected to the audio compression means, for receiving a removable diskette, for receiving the audio data output signal, and for recording this audio data output signal in its compressed format on the removable diskette;

playback means for receiving the removable diskette and for selecting and decompressing at least one selected audio data file recorded on this diskette; and

audio output and conditioning means, connected to the playback means, for selecting and retrieving a selected audio data file in audio format and for reproducing the selected audio data file in audibly perceptible form for playback at a real time delivery rate.

28. The apparatus of claim 27, further comprising:

a keypad, having at least two keys thereon that are tactilely distinguishable or visually distinguishable, connected to said interface and to the playback means, that allows a command to be entered that selects said selected text data file and that causes said audio output and conditioning means to convert said selected text data file to audible speech.

29. The apparatus of claim 27, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital

satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.

30. The apparatus of claim 27, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.

31. The apparatus of claim 27, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said text data file on said diskette.

32. The apparatus of claim 31, wherein said diskette recording means comprises a removable hard drive system that accepts and records said text data file on said removable diskette.

33. The apparatus of claim 31, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected text data file.

34. The apparatus of claim 27, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.

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35. Audio information storage and playback apparatus comprising:  
a universal data interface to receive a data file as part of an incoming  
signal, in digitized and compressed format, and to provide automatic data  
format recognition for the data file;

a microprocessor, connected to the data interface, to use the data  
format recognition information to implement a correct communications  
protocol to receive and extract the data file from the incoming signal, where  
the data file is received by the microprocessor at a transfer rate that is at least  
two times the transfer rate for normal, audibly perceptible playback of  
information contained in the data file;

data file interrogation means, connected to the microprocessor, for  
receiving the data file, for examining the data file to determine whether the  
data file contains at least one E-mail message and, when the data file contains  
at least one E-mail message, for removing and discarding the E-mail routing  
information for each E-mail message that is part of the data file, and for  
retaining the remainder of each E-mail message in the data file;

diskette recording means, connected to the data file interrogation  
means, for receiving a removable diskette, for receiving the data file  
extracted by the microprocessor and processed by the data file interrogation  
means, and for recording this data file on the removable diskette;

playback means for receiving the removable diskette and for selecting  
and decompressing at least one selected data file recorded on this diskette; and

audio output and conditioning means, connected to the playback means,  
for selecting and retrieving a selected data file and for reproducing the  
selected data file in audibly perceptible form for playback at a real time  
delivery rate.

36. The apparatus of claim 35, further comprising:

a keypad, having at least two keys thereon that are tactiley  
distinguishable or visually distinguishable, connected to said interface and to

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the playback means, that allows a command to be entered that selects said selected data file and that causes said audio output and conditioning means to convert said selected data file to audible speech.

37. The apparatus of claim 35, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.

38. The apparatus of claim 35, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.

39. The apparatus of claim 35, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said data file on said diskette.

40. The apparatus of claim 39, wherein said diskette recording means comprises a removable hard drive system that accepts and records said data file on said removable diskette.

41. The apparatus of claim 39, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected data file.

42. The apparatus of claim 35, wherein said incoming signal is received as digitized text, and at least one of said microprocessor and said playback

means includes a text-to-speech converter for converting digital text to an audio data file.

43. The apparatus of claim 35, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.

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44. Audio information storage and playback apparatus comprising:  
a universal data interface to receive a data file as part of an incoming signal, in digitized and compressed format, and to provide automatic data format recognition for the data file;

a microprocessor, connected to the data interface, to use the data format recognition information to implement a correct communications protocol to receive and extract the data file from the incoming signal, where the data file is received by the microprocessor at a transfer rate that is at least two times the transfer rate for normal, audibly perceptible playback of information contained in the data file;

diskette recording means, connected to the microprocessor, for receiving a removable diskette, for receiving the data file extracted by the microprocessor, and for recording this data file on the removable diskette;

data file interrogation means, for receiving the data file from the removable diskette, for examining the data file to determine whether the data file contains at least one E-mail message and, when the data file contains at least one E-mail message, for removing and discarding the E-mail routing

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information for each E-mail message that is part of the data file, and for retaining the remainder of each E-mail message in the data file;

playback means, connected to the data file interrogation means, for receiving all portions of the data file on the removable diskette that are not removed by the data file interrogation means, and for selecting and decompressing at least one selected data file recorded on this diskette; and

audio output and conditioning means, connected to the playback means, for selecting and retrieving a selected data file and for reproducing the selected data file in audibly perceptible form for playback at a real time delivery rate.

45. The apparatus of claim 44, further comprising:

a keypad, having at least two keys thereon that are tactilely distinguishable or visually distinguishable, connected to said interface and to the playback means, that allows a command to be entered that selects said selected data file and that causes said audio output and conditioning means to convert said selected data file to audible speech.

46. The apparatus of claim 44, wherein said universal data interface comprises a data input/output buffer, adapted for connection to at least one data communications link drawn from the class of communications links consisting of a conventional telephone line, an ISDN telephone line, a digital satellite broadcast link, a two-way interactive television cable link, and an on-line link to a computer.

47. The apparatus of claim 44, further comprising a telephone modem, connected to said data interface, for receiving and converting said incoming signals and for passing the converted incoming signals to said data interface.

48. The apparatus of claim 44, wherein said diskette recording means comprises a PCMCIA format card that accepts and records said data file on said diskette.

49. The apparatus of claim 48, wherein said diskette recording means comprises a removable hard drive system that accepts and records said data file on said removable diskette.

50. The apparatus of claim 48, wherein said data interface comprises a radio frequency receiver and demodulator, arranged for receipt of said selected data file.

51. The apparatus of claim 44, wherein said incoming signal is received as digitized text, and at least one of said microprocessor and said playback means includes a text-to-speech converter for converting digital text to an audio data file.

52. The apparatus of claim 44, wherein said playback means includes an audibly perceptible or visually perceptible display that displays user information, drawn from the groups of user information consisting of (1) an estimated length of time required for real time playback of a user-specified selection recorded on said removable diskette, (2) a title or phrase describing a user-specified selection recorded on said removable diskette and (3) a user-specified category to which a user-specified selection recorded on said removable diskette is assigned.